ROCA
SOLID STEEL SASH

THE BOGERT & CARLOUGH CO.
PATERSON, NEW JERSEY

D-20

ROCA
SOLID STEEL SASH

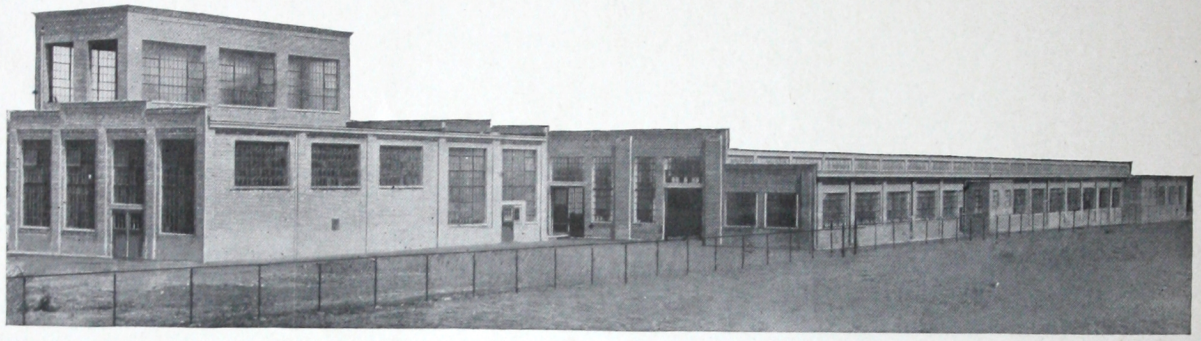
Sidewall Sash
Monitor Sash
Power House Sash
Mechanical Operators
Steel Partitions
Tubular Steel Doors
Steel Door Frames

CATALOG
D---20

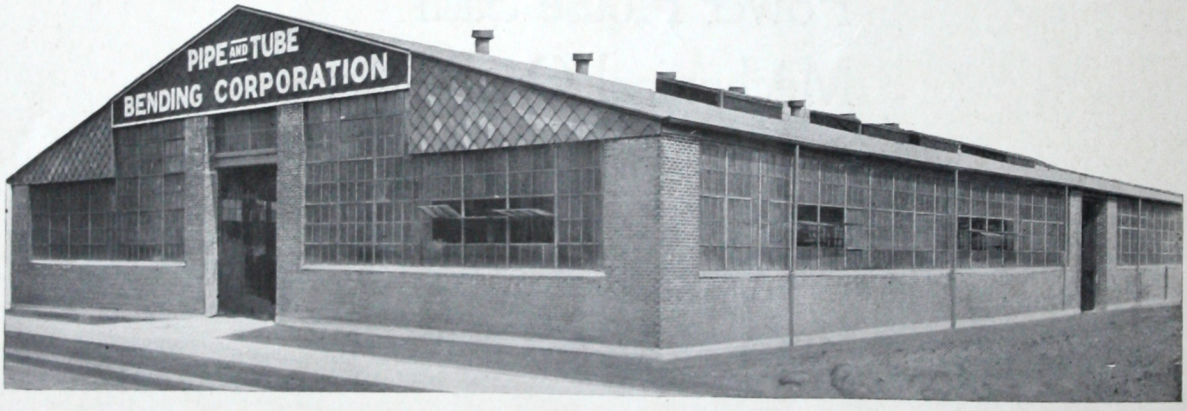
The Bogert & Carlough Co.

Paterson, New Jersey

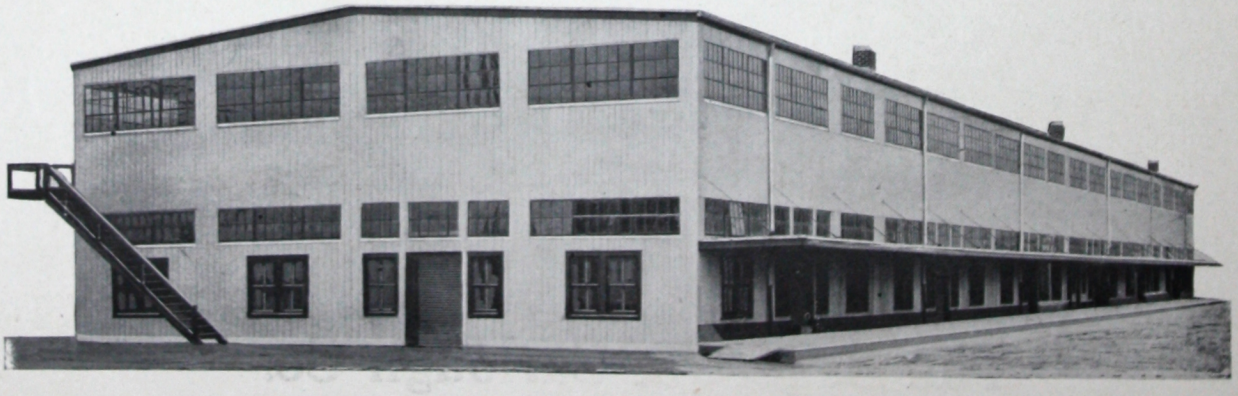
Paterson Vehicle Co. Factory, Paterson, N. J.
Wm. T. Fanning, Archt., Paterson, N. J.



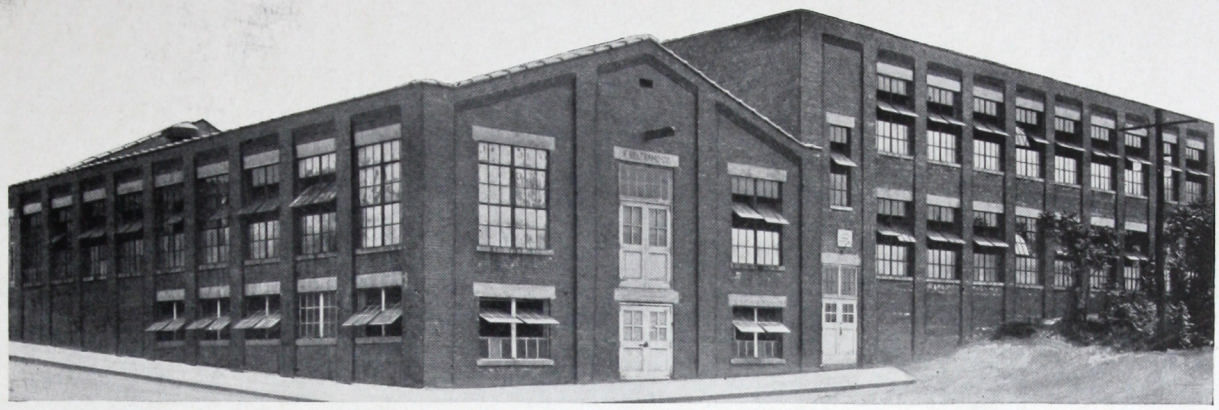
The Dalton Mfg. Co. Factory, Sound Beach, Conn.
Richard Deeves & Son, Contractors, N. Y City. O. M. Beck, Architect, Brooklyn, N. Y.



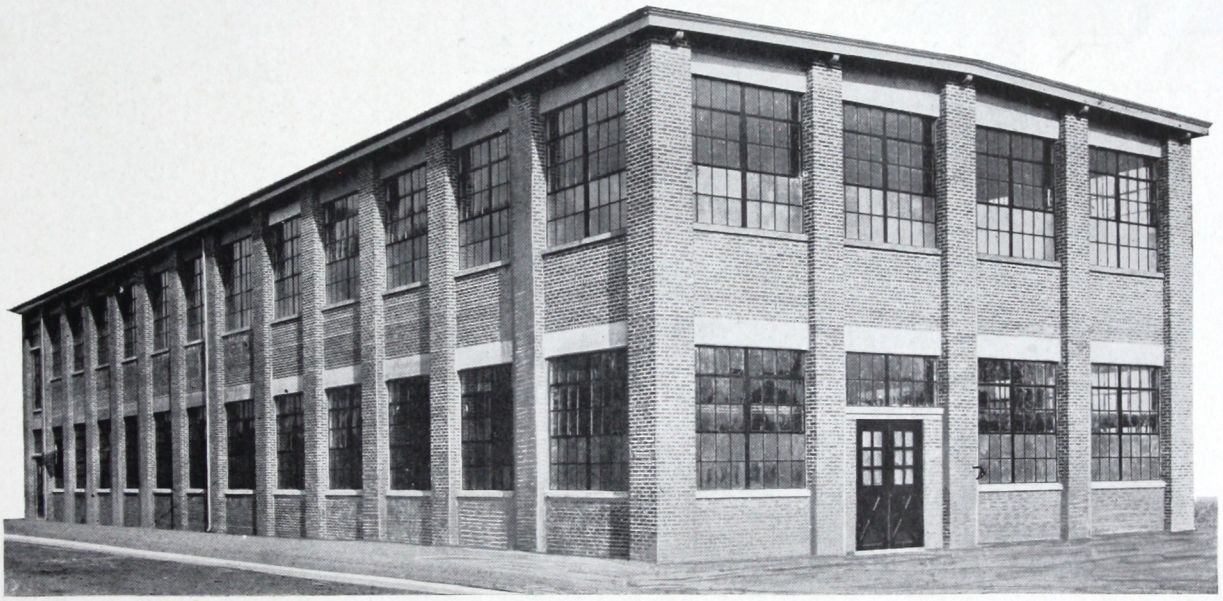
Pipe & Tube Bending Corp. Factory, Belleville, N. J.
Chas. P. Gilpin, Contractor, Phila Fred P. Platt & Bro., Architects, N. Y. City.



Winslow Warehouse, Commercial Dock No. 1, Norfolk, Va.
J. Y. Gooch & Co., Contractors, Norfolk, Va. B. F. Michell, Architect, Norfolk, Va.

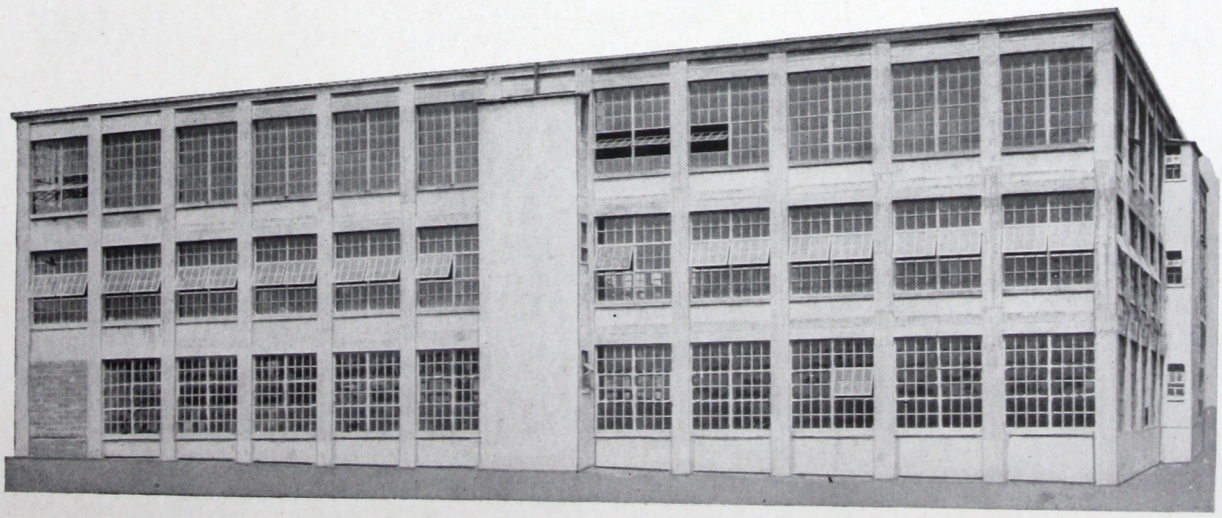


Beltramo Silk Dyeing and Finishing Co. Plant, Paterson, N. J.

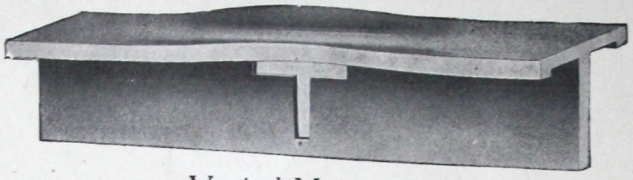


Lincoln Silk Co. Mill, Paterson, N. J.

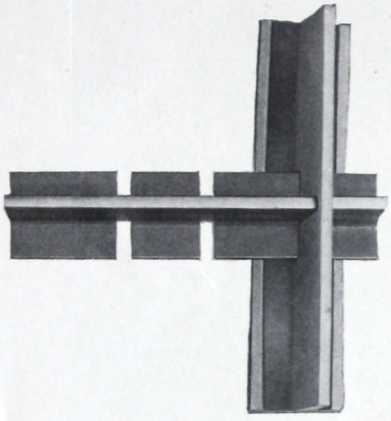
William P. Gary, Contractor, Totowa, N. J. *Arthur Haenichen, Architect, Paterson, N. J.*



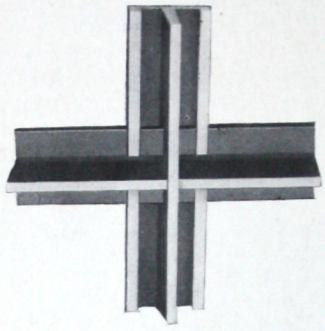
Taback Bros. Silk Mill, Paterson, N. J.



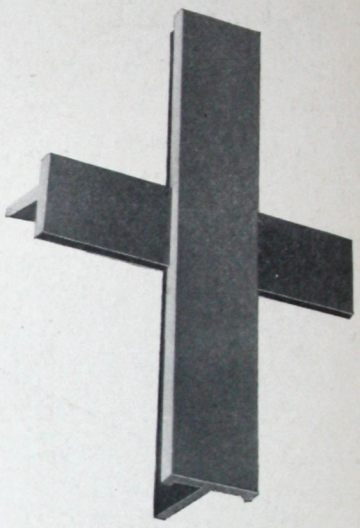
Vertical Muntin Bar



Vertical Muntin with Horizontal Muntin partially inserted



Interior View of Completed Muntin Intersection

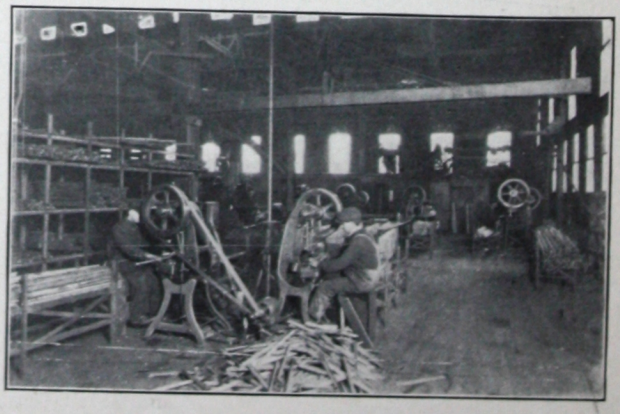


Front View of Completed Flat Muntin Intersection

Horizontal Muntin Bar

The BOCA Lock-joint and Method of Construction

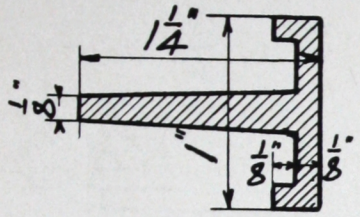
Corner of Assembling Department



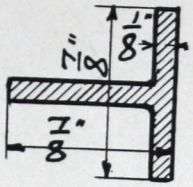
Portion of Press Room

BOCA
SOLID STEEL SASH

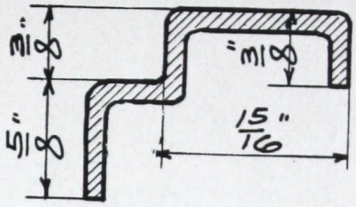
BOCA ROLLED SECTIONS---FULL SIZE



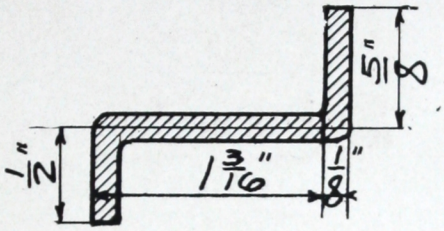
SECTION 101
Vertical Muntin



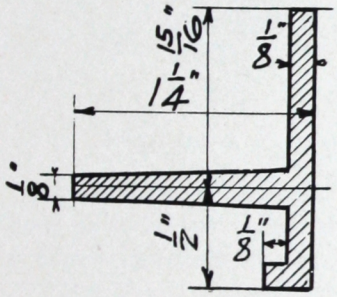
SECTION 103
Horizontal Muntin



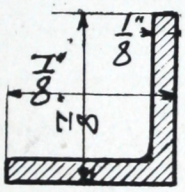
SECTION 105
Weathering Member at Head of Ventilator



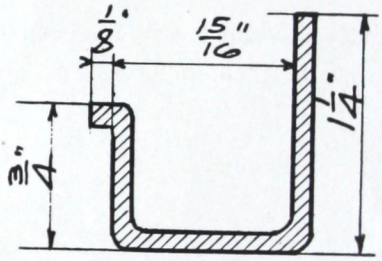
SECTION 109
Member at Top of Ventilator



SECTION 102
Standard Member for Head, Jamb and Sill

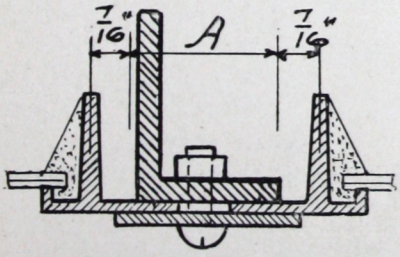


SECTION 106
Weathering Angle at Bottom of Ventilator



SECTION 104
Three Point Weathering Member for Sides of Ventilator

BOCA ADJUSTABLE MULLIONS---ONE-HALF SIZE

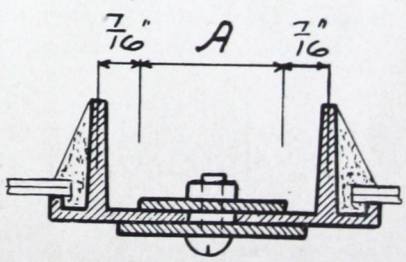


STANDARD MULLION M-M

MULLION SECTION	DIM. A
3" x 2" Angle and 2" Flat	2"
2½" x 2" " " " "	2"
2" x 1½" " " 1½" "	1½"

These mullions, being adjustable, permit BOCA sash, when used in multiples, to fit openings varying slightly from standard dimensions shown on pages 8 and 9.

Each adjustable mullion permits a variation of ⅜" greater or less in width. For example, as shown, an opening taking sixteen lights in widths, made up of four units, each four lights wide, will call for three mullions. The standard width of such an opening for 14" x 20" glass is 19'-11½". The 1⅛" variation in these three mullions, therefore, allows this opening to be as small as 19'-10⅜" or as large as 20'-0⅝". Therefore the above sash combination is adaptable to 20' 0" bays.



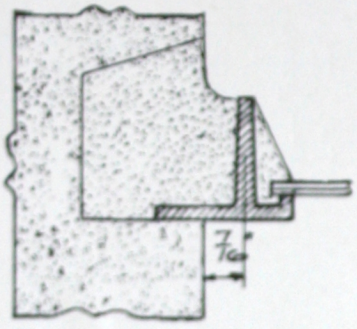
SPECIAL MULLION N-N
For Heights Under 5'-0"

MULLION SECTION	DIM. A
2 Flats 2" wide	2"
2 " 1½" wide	1½"

BOCA
SOLID STEEL SASH

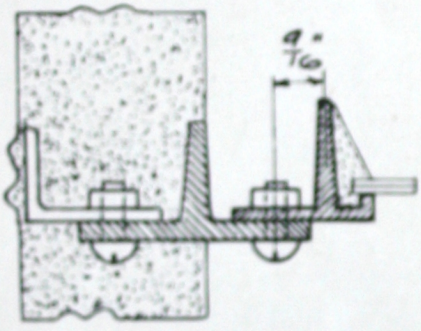
HEAD, JAMB AND SILL CONSTRUCTION---ONE HALF SIZE

CONCRETE



DETAIL 20

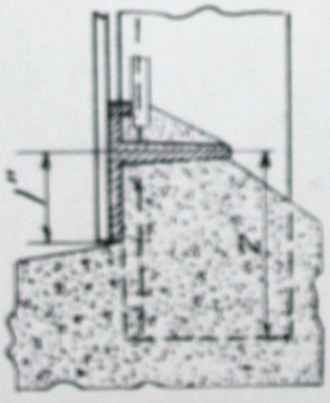
Section at head or Jamb
Groove left in concrete to receive sash and grouted after sash is set.



DETAIL 21

Section at Head or Jamb
for Power House Type

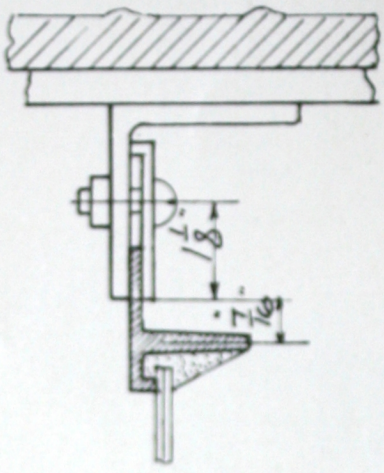
Slotted holes 5/8" x 3/8" in Tee and sash frame to allow for adjustment.



DETAIL 22

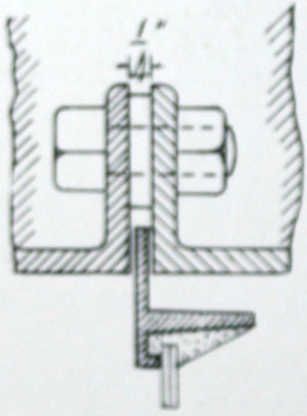
Section at Sill
Finished sill formed after sash is set.

BRICK



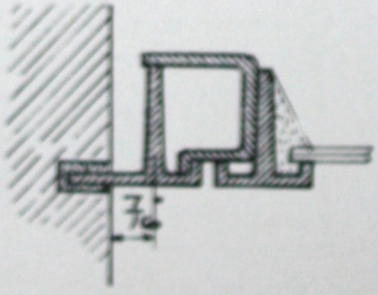
DETAIL 23

Section at Head
Angle under lintel provided with 3/8" holes 1'-6" centers (by others). Necessary clips and 5/16" bolts furnished with sash.



DETAIL 24

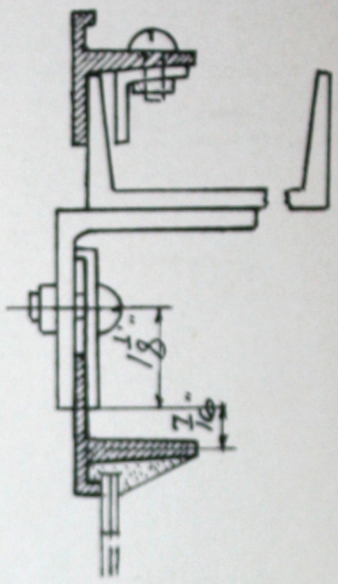
Section at Head
Sash held by lintel no clips and bolts necessary.



DETAIL 25

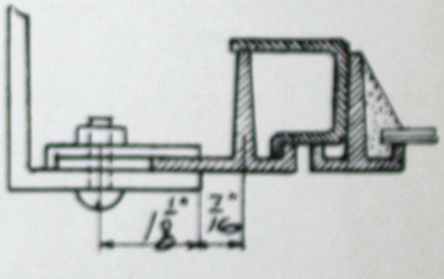
Section at Jamb
Showing sash built in joint of brick

STRUCTURAL STEEL



DETAIL 26

Section at Horizontal Mullion
Sash secured above and below same by clips and 5/16" bolts furnished with sash.



DETAIL 27

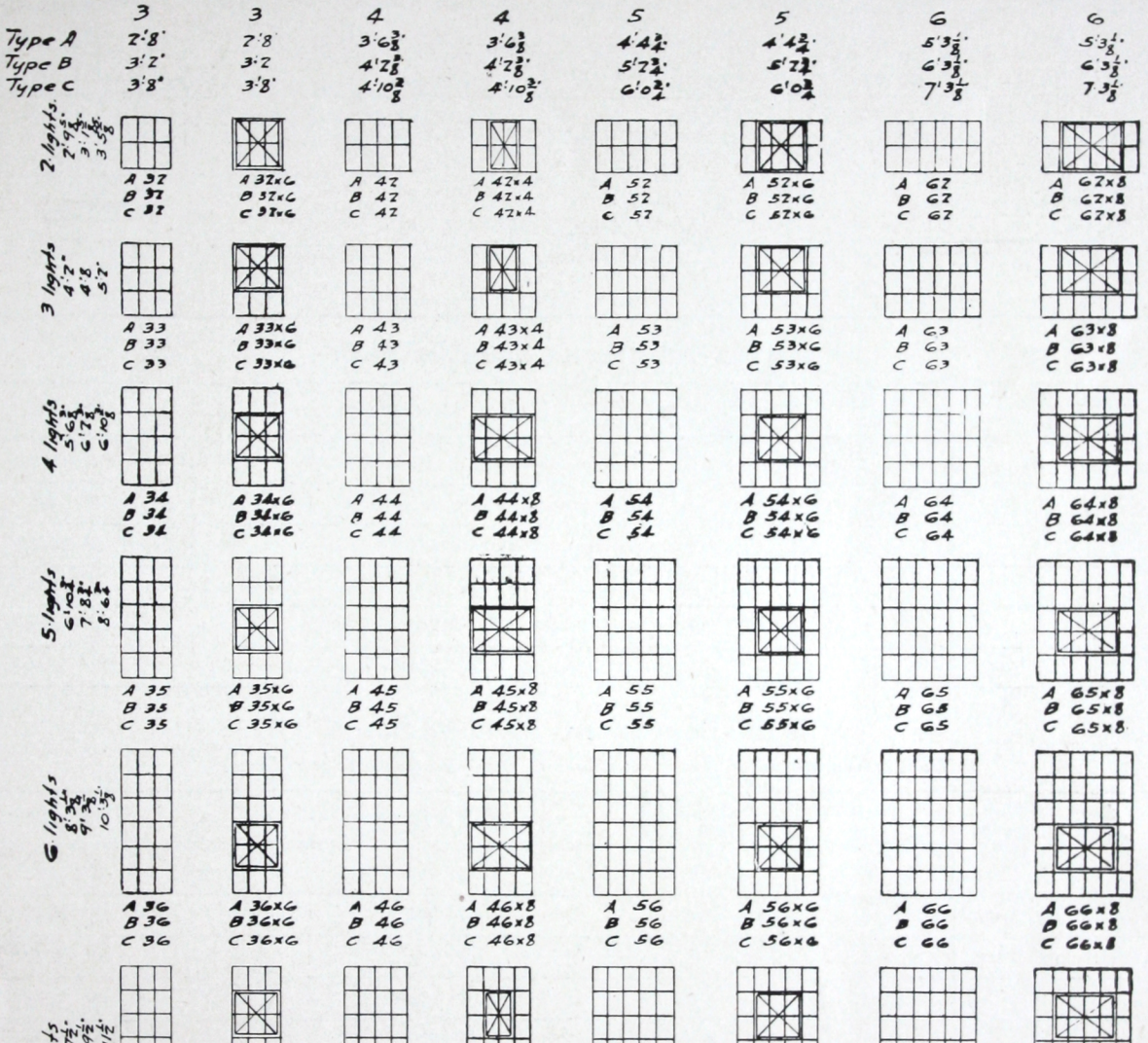
Section at Jamb
Sash secured by clips and 5/16" bolts furnished with sash.

NOTE

Horizontal Mullions are not furnished by Sash Contractor, unless by special agreement.

BOCA
SOLID STEEL SASH

TYPES OF BOCA STANDARD SASH



The measurements given in margins above are **wall openings.** Measurements for **overall** width and height of sash are **1 inch greater** than wall openings, that is, sash project into masonry ½ inch on all four sides.

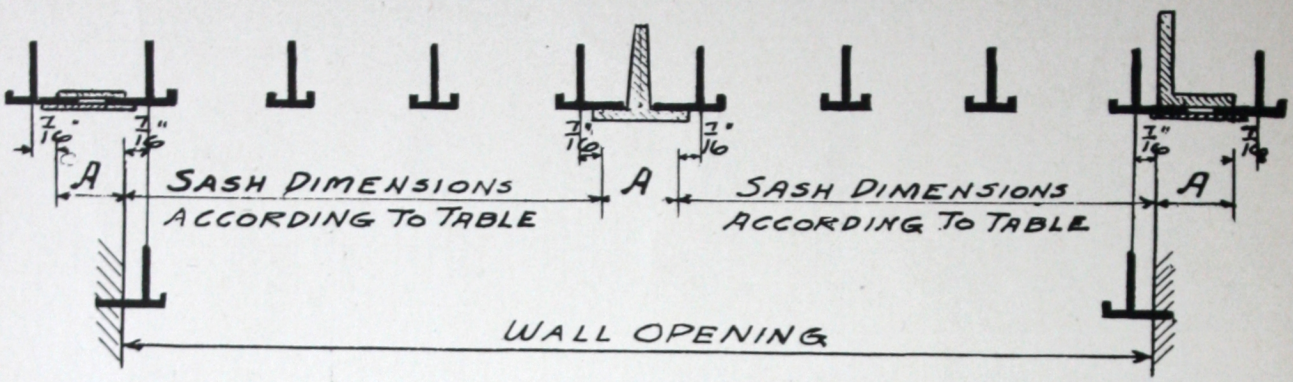
Explanation of Numbering Code. In the standards given above, the first letter indicates the size of glass; A represents 10 x 16 inch, B, 12 x 18 inch and C, 14 x 20 inch pane size. The first numeral following the letter A, B or C indicates the number of lights in width and the second numeral, the number of lights in height in the sash.

In case of Ventilated Units the first letter and following two numbers indicate same as above. The letter following these indicates number of ventilators in sash; X for one and Y for two ventilators. The number following these letters indicates the number of lights in each ventilator. Thus C 54 X 6 is a sash taking 14 x 20 inch glass, five lights wide, four lights high, equipped with one ventilator of six lights.

Ventilator lights which abut at top and bottom must be trimmed ¾" and those at sides 1" along abutting edge.

BOCA
SOLID STEEL SASH

SYMMETRICAL COMBINATIONS OF STANDARD SASH



Height Dimensions, Standard Sash

No. Lts. in Height of Opening	No. Units High	No. Lights in Height of Units	12" x 18" Glass	14" x 20" Glass
2	1	2	3′ 1⅝″	3′ 5⅝″
3	1	3	4′ 8″	5′ 2″
4	1	4	6′ 2⅜″	6′ 10⅜″
5	1	5	7′ 8¾″	8′ 6¾″
6	1	6	9′ 3⅛″	10′ 3⅛″
7	1	7	10′ 9½″	11′ 11½″

Width Dimensions, Standard Sash

The widths shown in any column below can be furnished in any of the heights shown in the same column above

No. Lights. in Width of Opening	No. Units Wide	No. Lights in Width of Units	12" x 18" Glass	14" x 20" Glass
3	1	3	3′ 2″	3′ 8″
4	1	4	4′ 2⅜″	4′ 10⅜″
5	1	5	5′ 2¾″	6′ 0¾″
6	1	6	6′ 3⅛″	7′ 3⅛″
6	2	3, 3	6′ 6″	7′ 6″
8	2	4, 4	8′ 6¾″	9′ 10¾″
9	3	3, 3, 3	9′ 10″	11′ 4″
10	2	5, 5	10′ 7½″	12′ 3½″
10	3	3, 4, 3	10′ 10⅜″	12′ 6⅜″
11	3	3, 5, 3	11′ 10¾″	13′ 8¾″
11	3	4, 3, 4	11′ 10¾″	13′ 8¾″
12	2	6, 6	12′ 8¼″	14′ 8¼″
12	3	4, 4, 4	12′ 11⅛″	14′ 11⅛″
12	3	3, 6, 3	12′ 11⅛″	14′ 11⅛″
13	3	4, 5, 4	13′ 11½″	16′ 1½″
13	3	5, 3, 5	13′ 11½″	16′ 1½″
14	3	5, 4, 5	14′ 11⅞″	17′ 3⅞″
14	3	4, 6, 4	14′ 11⅞″	17′ 3⅞″

BOCA SOLID STEEL SASH

SYMMETRICAL COMBINATIONS OF STANDARD SASH---Continued

No. Lights in Width of Opening	No. Units Wide	No. Lights in Width of Units	12" x 18" Glass	14" x 20 "Glass
14	4	3, 4, 4, 3	15′ 2¾″	17′ 6¾″
15	3	5, 5, 5	16′ 0¼″	18′ 6¼″
15	3	6, 3, 6	16′ 0¼″	18′ 6¼″
16	3	5, 6, 5	17′ 0⅝″	19′ 8⅝″
16	3	6, 4, 6	17′ 0⅝″	19′ 8⅝″
16	4	4, 4, 4, 4	17′ 3½″	19′ 11½″
17	3	6, 5, 6	18′ 1″	20′ 11″
18	3	6, 6, 6	19′ 1⅜″	22′ 1⅜″
18	4	4, 5, 5, 4	19′ 4¼″	22′ 4¼″
18	4	3, 6, 6, 3	19′ 4¼″	22′ 4¼″
19	5	5, 3, 3, 3, 5	20′ 7½″	23′ 9½″
20	4	5, 5, 5, 5	21′ 5″	24′ 9″
20	4	4, 6, 6, 4	21′ 5″	24′ 9″
20	5	4, 4, 4, 4, 4	21′ 7⅞″	24′ 11⅞″
20	5	3, 4, 6, 4, 3	21′ 7⅞″	24′ 11⅞″
21	5	4, 4, 5, 4, 4	22′ 8¼″	26′ 2¼″
21	5	3, 5, 5, 5, 3	22′ 8¼″	26′ 2¼″
21	5	3, 6, 3, 6, 3	22′ 8¼″	26′ 2¼″
22	4	5, 6, 6, 5	23′ 5¾″	27′ 1¾″
22	5	4, 4, 6, 4, 4	23′ 8⅝″	27′ 4⅝″
22	5	4, 5, 4, 5, 4	23′ 8⅝″	27′ 4⅝″
22	5	3, 5, 6, 5, 3	23′ 8⅝″	27′ 4⅝″
22	6	3, 4, 4, 4, 4, 3	23′ 11½″	27′ 7½″
22	6	3, 3, 5, 5, 3, 3	23′ 11½″	27′ 7½″
23	5	4, 5, 5, 5, 4	24′ 9″	28′ 7″
23	5	3, 6, 5, 6, 3	24′ 9″	28′ 7″
24	4	6, 6, 6, 6	25′ 6½″	29′ 6½″

EXPLANATION OF TABLE

Suppose sash are required for a wall opening approximately 12'-0" wide: if 14" x 20" glass size is desired, as shown in the last column of Width Dimension Table, by referring to the second and third columns, two units each, five lights wide are required giving an exact wall opening of 12'-3½"; if 12" x 18" glass is desired, by referring to the same columns, three units arranged 3-5-3 are required, giving a total width of 11'-10¾".

For standard heights of wall openings see Height Dimension Table on opposite page.

The **Mullion Distance** allowed in computing the above table is 2". For other mullion dimensions see Dimension A on page 5. The dimensions for widths and heights given in the above tables are exact **masonry** and **structural steel openings.**

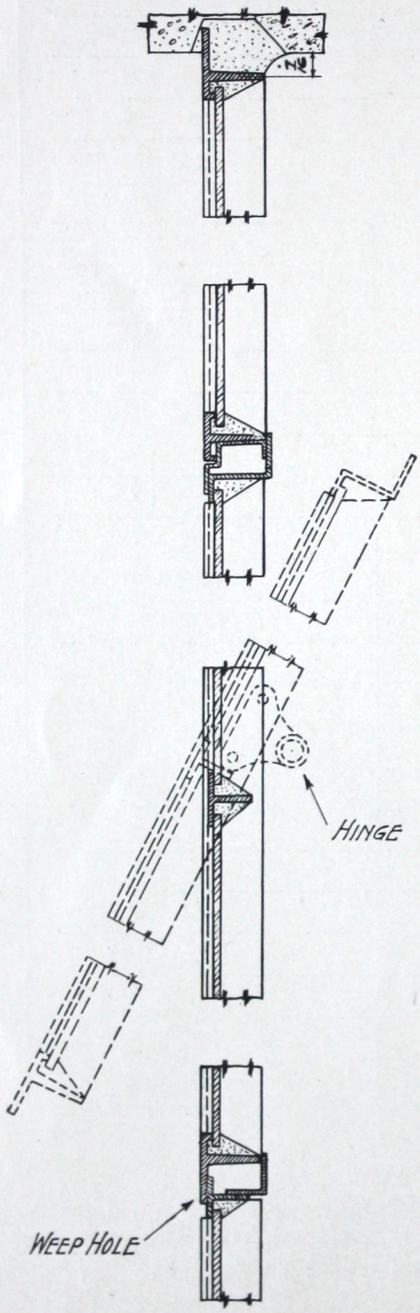
GENERAL INFORMATION

Sash for 14" x 20" glass are the most economical, and this size and sash for 12" x 18" glass are standard. **Prompt delivery** and **saving in cost** are assured by specifying **these sizes.**

BOCA Solid Steel Sash are glazed from the interior. Glass is firmly held in place by means of glazing clips, from four to six being used to each pane depending on size, Glass should be back puttied.

All steel sash receive one dipped coat of paint at factory before shipment.

VENTILATOR WEATHERING---SECTIONS ONE-QUARTER SIZE



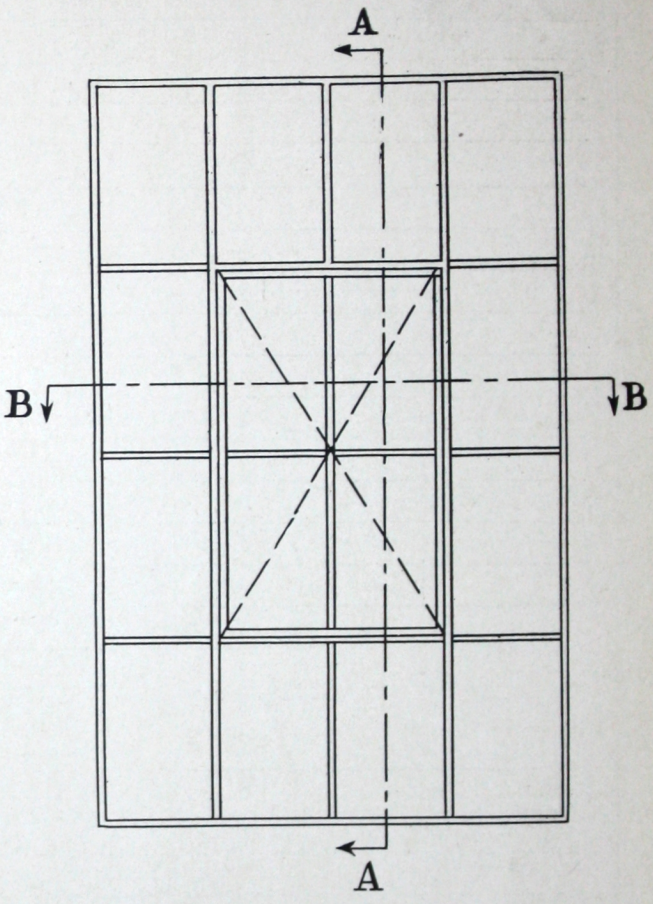
Showing typical steel window and ventilator with distinctive **three point weathering.**

These **three contacts** give a positive weather and wind proof sash.

This **feature** is **new** and has proven its worth in the many installations of BOCA sash.

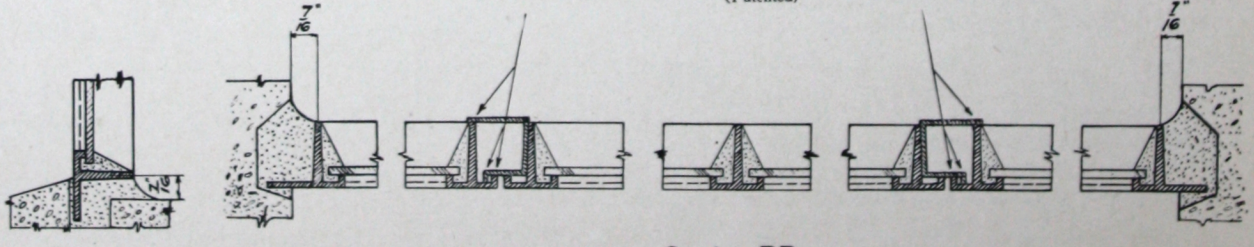
The special **Zee Member** at the top of ventilator is also **new.**

This shaped member adds to the neatness of ventilator design and to the simplicity of its construction.



Typical Elevation of Sash

Continuous **three-point weathering contact** at Ventilator.
(Patented)

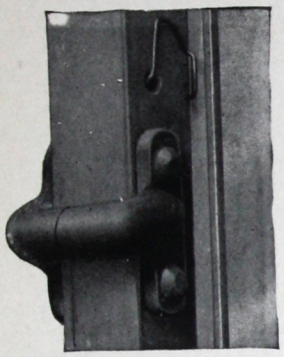


Section AA

Section BB

BOCA
SOLID STEEL SASH

VENTILATORS



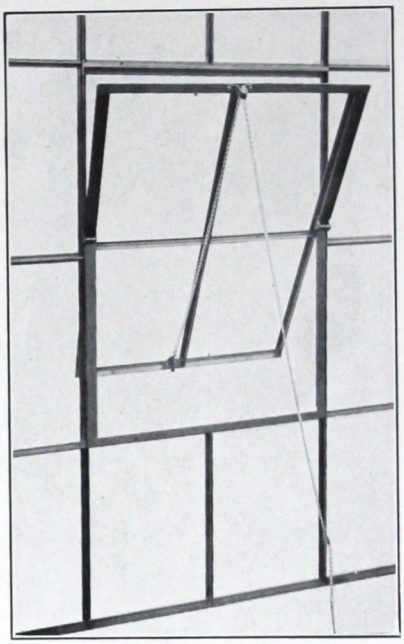
Hinge and Clip

Standard Ventilators are horizontally pivoted 2 above the center.

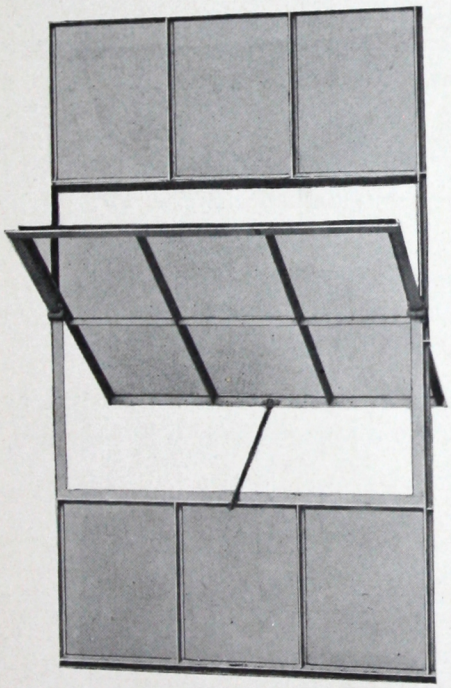
Ventilators may be hung near top or bottom to meet special requirements.

A notched **Push Bar** is regularly supplied to hold ventilator open and to lock it, by placing end of bar back of catch.

Another method of opening and closing ventilators is by means of a **spring catch** and **chain** which will be supplied where specified.



Interior View of BOCA Sash Unit Ventilator operated with Spring Catch and chain

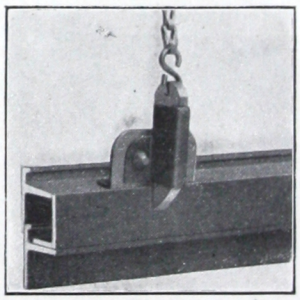


Interior View of BOCA Sash Unit Ventilator operated with Push Bar

THEIR SPECIAL FEATURES

The **Three Point Weathering contact** at sides of the ventilator. This patented feature interrupts all air currents and assures a wind and weatherproof construction.

The **External Hinge.** This is of two parts made of pressed steel and mounted with a steel pin. The hinge projects back of the ventilator, permitting the upper weathering member to lap inside the lower member, forming a concealed and stormproof joint.



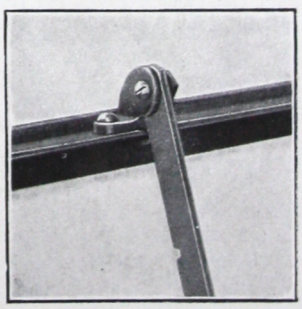
Spring Catch

The **Push Bar Attachment.** This attachment and the notched push bar for holding ventilator open, and locking same, are applied to the sash at the factory. This eliminates the expense of attaching this hardware after arrival at destination.

The **Spring Catch.** This is of steel construction throughout, and so designed that the ventilator automatically closes and locks. These catches together with chain, are boxed and shipped to be attached at destination.

The **Glazing Clip.** Made of specially formed spring steel wire, is easily applied and by it the glass is firmly held in position.

The **Putty Cushion**. The special lipped tee members used in the BOCA sash permit of a cushion being formed by the putty, which adds to the watertightness of the sash and minimizes the glazing cost through breakage.

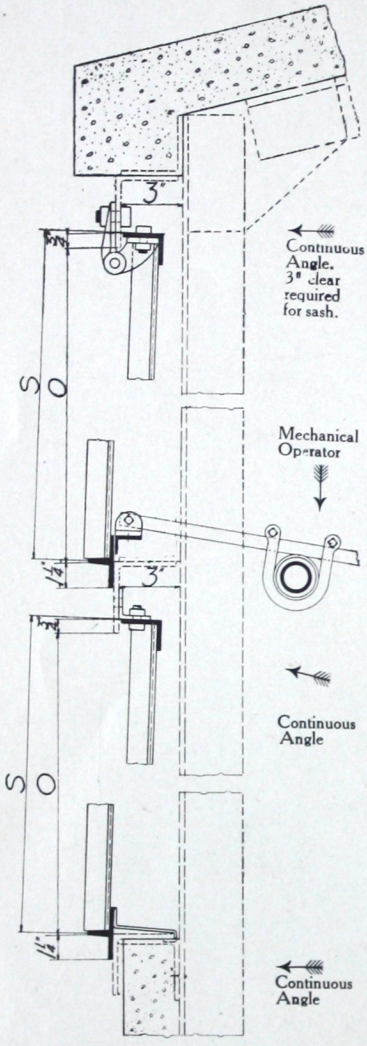


Push Bar Attachment

ROCA
SOLID STEEL SASH

CONTINUOUS MONITOR SASH

TOP HUNG, FIXED AND CENTER PIVOTED



Vertical Section
Upper Sash Top Hung.
Lower Sash Fixed.

TABLE OF OPENINGS FOR CONTINUOUS SASH

Height of Sash (S)	Height of Opening (O).
2'-11¼"	2'-10½"
3'-11¼"	3'-10½"
4'-11¼"	4'-10½"
5'-11¼"	5'-10½"

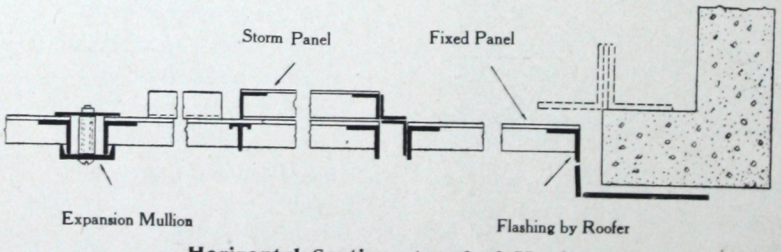
Dimension (O) is the clear vertical distance between continuous horizontal angles
Height of sash (S) less ¾" gives the height of opening (O).

SASH MEMBERS

Top Angle 2" x 1½" x 3/16" — Muntins Special Tee 101
Side Angles 1½" x 1½" x 3/16" — Sill Tee 2½" x 1¼" x 3/16"
Expansion Mullions 2" Channel and 2" x ⅛" Flat.

MECHANICAL OPERATOR

This is furnished in either rack and pinion, rocker arm or tension type as determined by conditions. The method of control from the floor is by a gearing device operated either by shaft or chain.



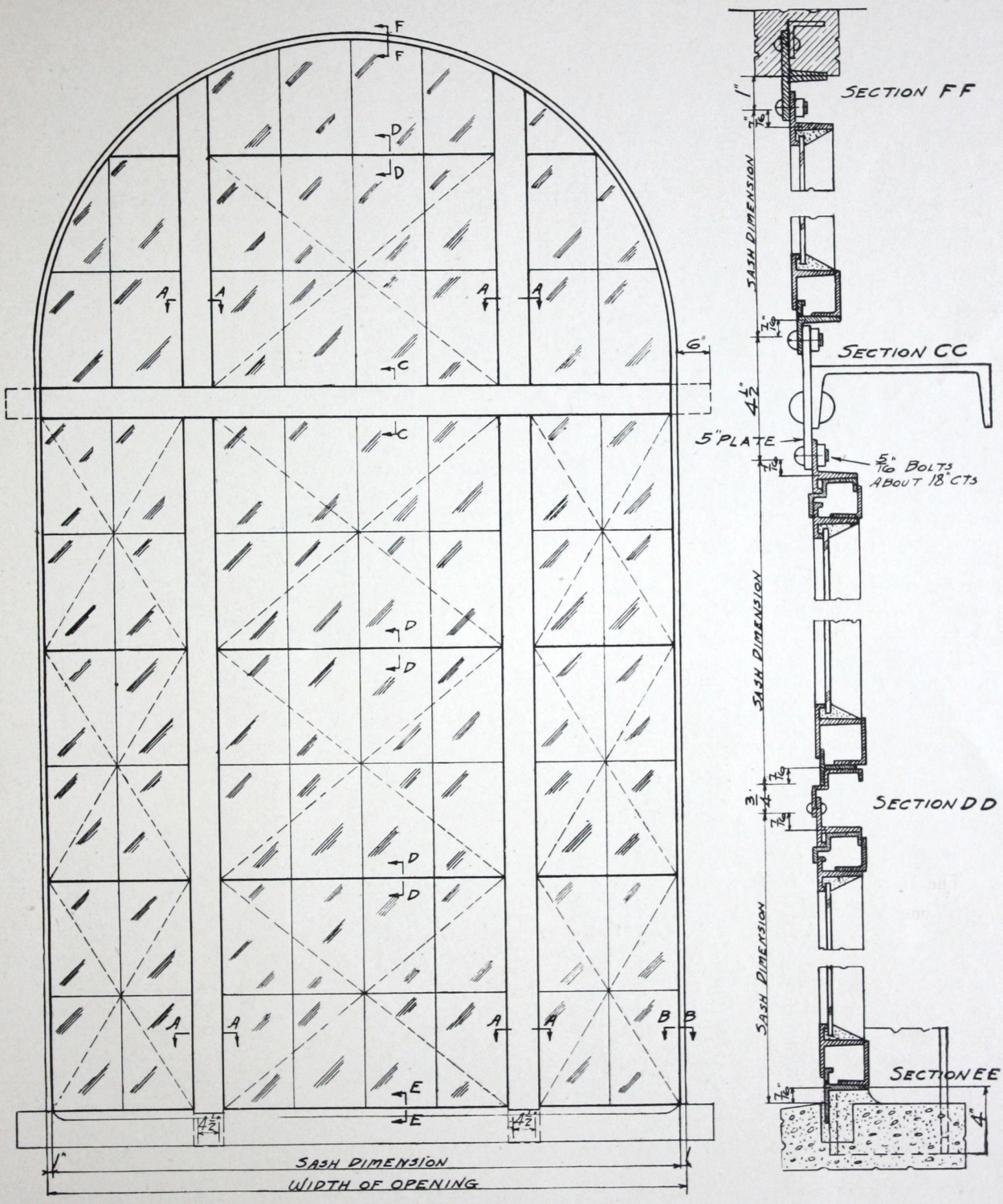
Horizontal Section at end of Monitor

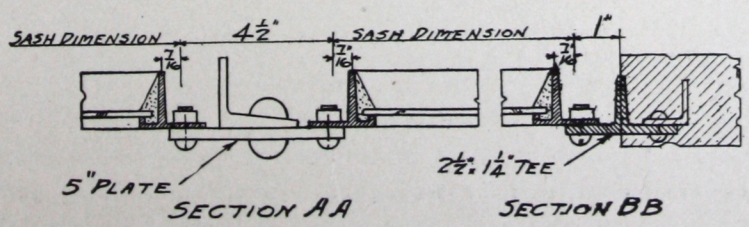
Continuous Sash are made in panels 18 and 20 feet long, and in standard heights (S) shown above.
Continuous Operated Sash can be equipped with storm and fixed panels at ends if so specified.
Continuous Angles to which Monitor Sash is attached are not furnished with Monitor Sash.
Vertical members are required to support Sash and Operating Device on centers not exceeding 8'-0".
Separate price will be given for the **continuous angles** and **vertical members** if desired.

Holes in structural steel members to be punched by steel contractor and all flashing to be installed by roofer.

BOCA
SOLID STEEL SASH

BOCA POWER HOUSE SASH





NOTE

Structural Steel Mullions and Tee Frame furnished with sash units.

BOCA STEEL DOORS

Swinging Type

These doors are made of a rectangular steel frame 3½" wide x 1½" thick with corners mitred and accurately welded. The intermediate horizontal member is also welded in position.

The upper panel is constructed to receive glass and consists of a BOCA sash unit riveted to the door frame. The lower panel is filled with a No. 10 or No. 12 steel plate also riveted to this frame. The several small glass panels may be changed to one large panel by omitting the interior members of the sash unit and supplying a small angle stop around the edge to hold the glass in place. Doors are supplied with three heavy hinges, standard lock and handles or knobs for operating.

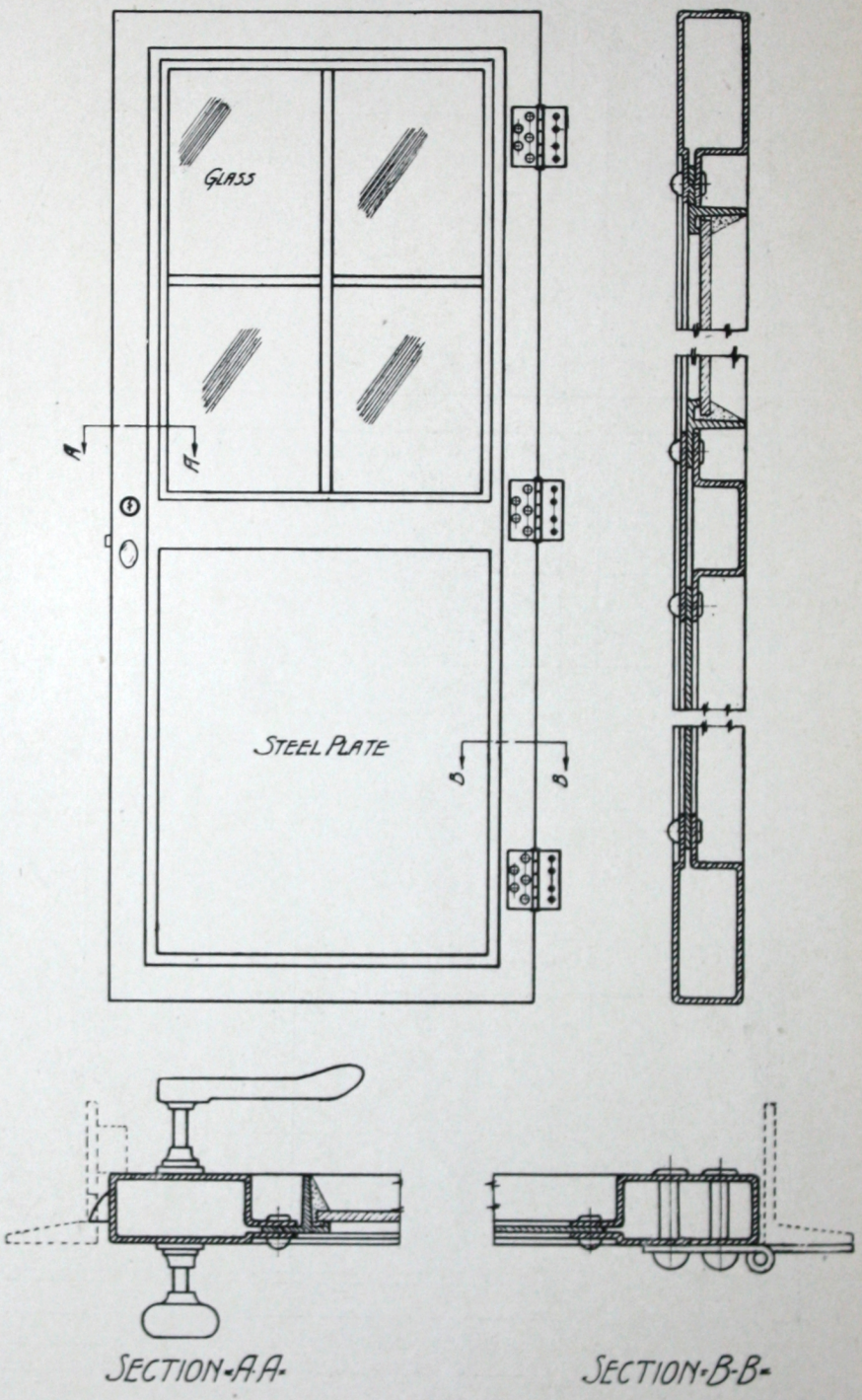
BOCA Fire Escape Doors are of similar construction. "Panic Bolts" are supplied at additional cost when required.

Sliding Type

These doors are of similar construction to the swinging doors described above. The interior members are of BOCA sash units with a No. 10 or No. 12 plate in the lower portion.

Swinging or Sliding doors for large openings are constructed of heavy rectangular steel frame or of structural angles

Special details will be submitted on request embodying our ideas for large doors construction to meet unusual conditions.

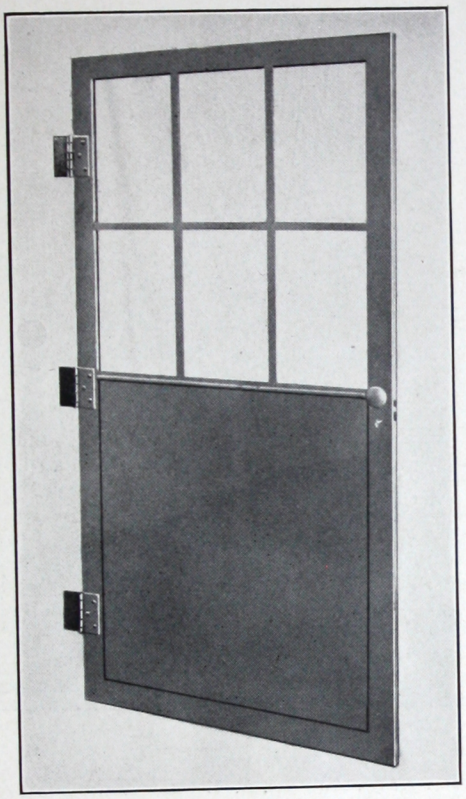


BOCA STEEL PARTITIONS

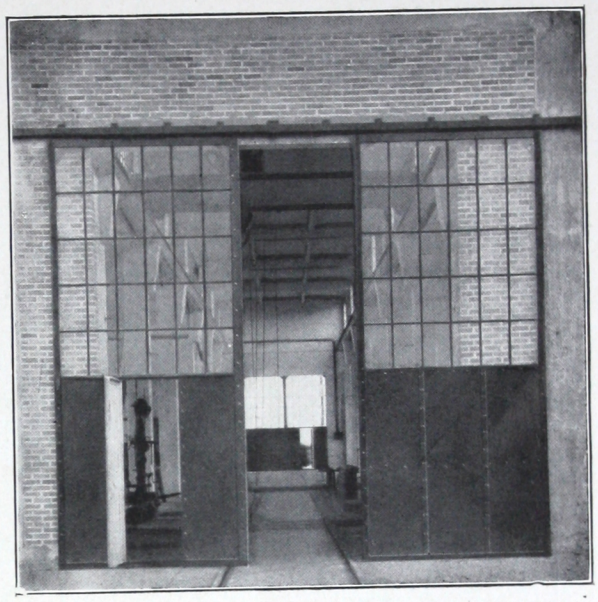
These partitions are constructed of regular sash units joined together with mullions, the lower part of units being of sheet steel. Door jambs, transoms and doors are supplied as required. Partitions are usually of special design to meet specific requirements of offices, warehouses or factories. It is therefore advisable to submit details and dimensions and prepare quotations from such exact information.

BOCA
SOLID STEEL SASH

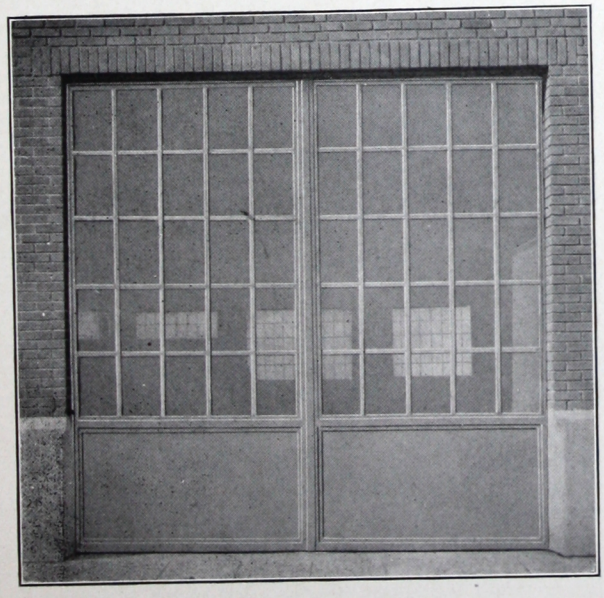
BOCA STEEL DOORS



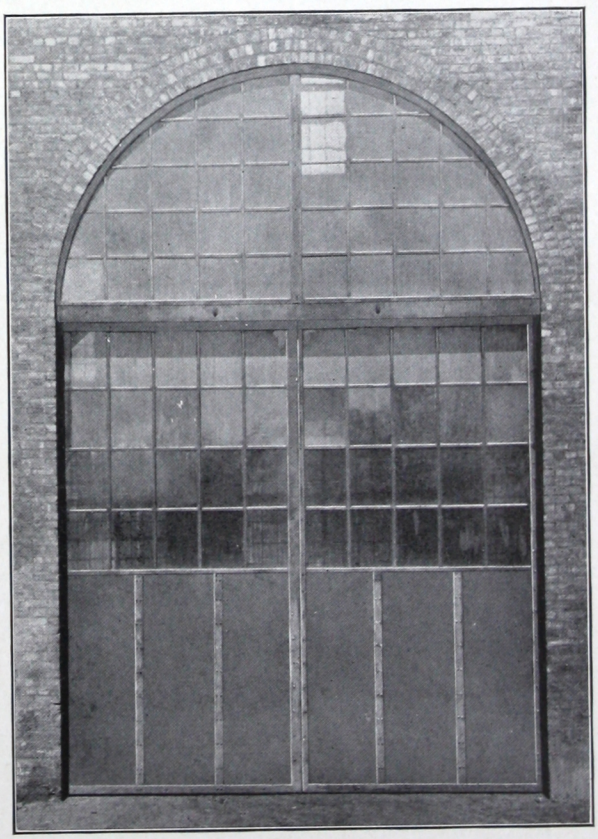
BOCA Swinging Door
Upper Panel arranged for small sizes of glass



Sliding Doors, Machine Shop
Atlantic Gulf and Pacific Co., Brooklyn, N. Y.
Each Door 6'-6" wide x 14'-10" high with
Pilot Door 2'-2" x 7'-0"



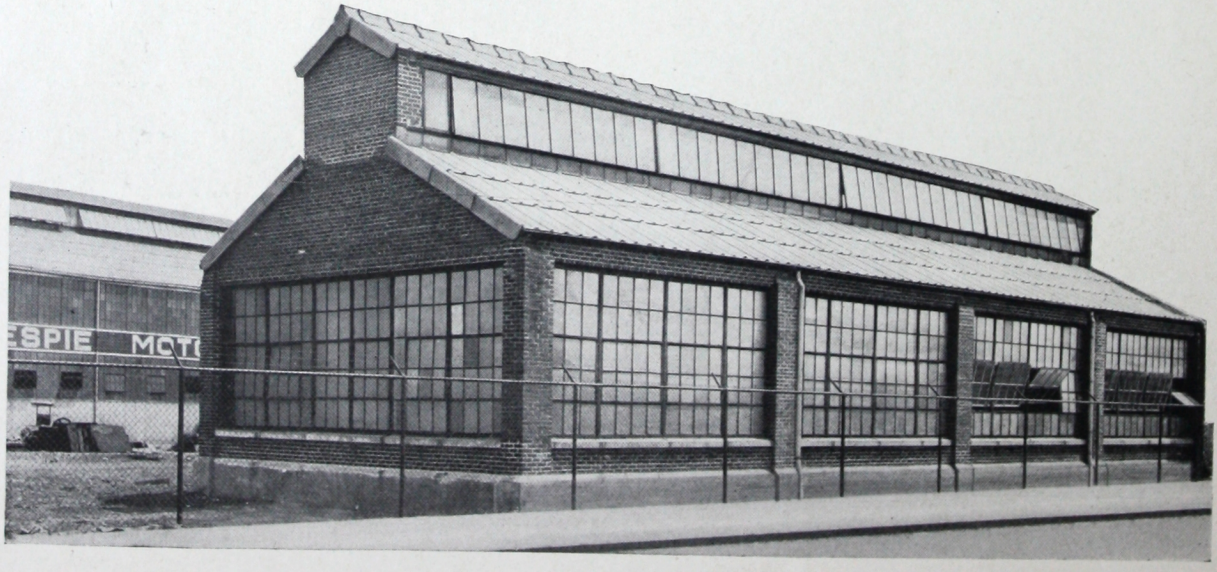
Sliding Doors, General Car & Equipment Co. Garage
Rochelle Park, N. J.
Wall Opening 10'-0" wide x 10'-0" high



Sliding Doors, and Transom, Engine House,
Joseph Chadwick & Son, Newburgh, N. Y.
Each Door 6'-2" wide x 12'-2" high

Morania Commercial Garage

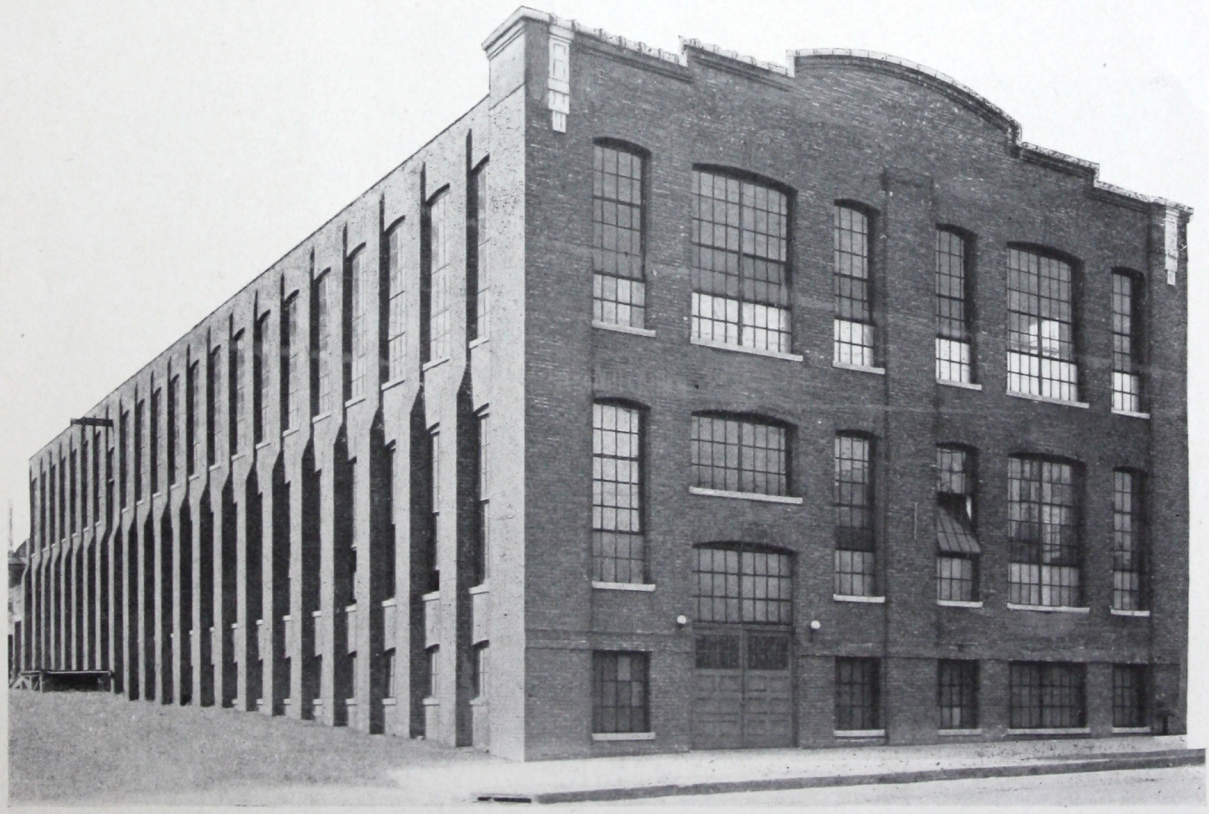
Isaac A. Hopper's Sons, Inc., Contrators, N. Y. City *James S. Maher, Architect, N. Y. City*



Gillespie-Eden Co. Restaurant Building, Paterson, N. J.

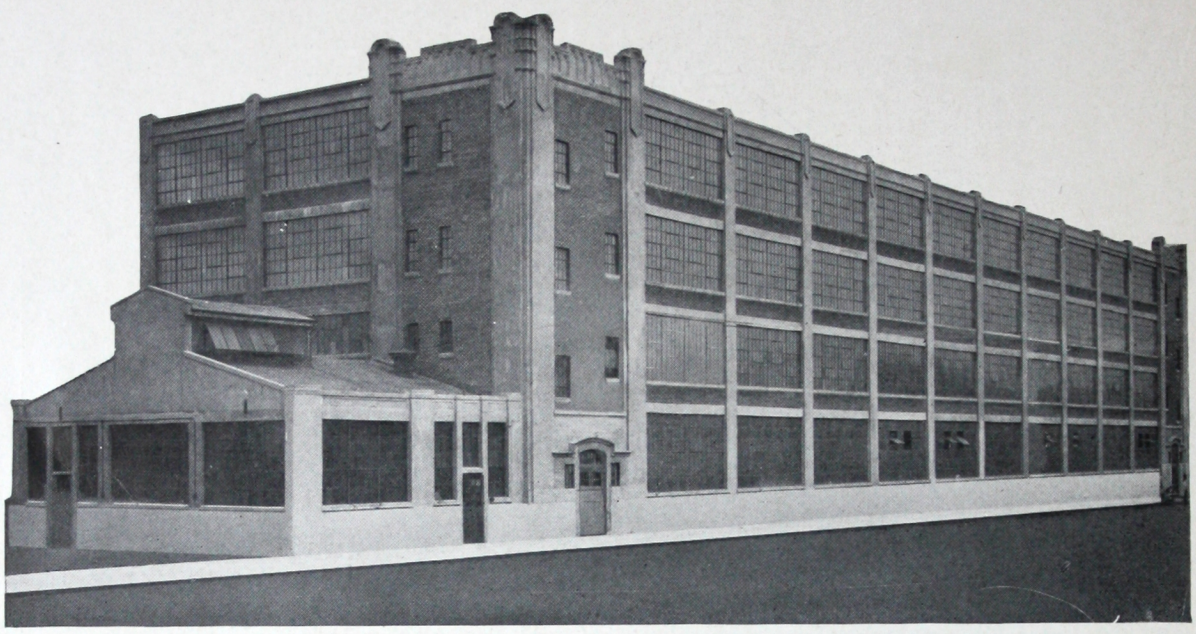
Standard Music Roll Co. Factory, West Orange, N. J.

American Concrete Steel Co., Contractors, Newark, N. J. Augustus Eichorn, Architcet, West Orange, N J.



Thos. A. Kelly Warehouse, Paterson, N. J.

William T. Fanning, Architect, Paterson, N. J.

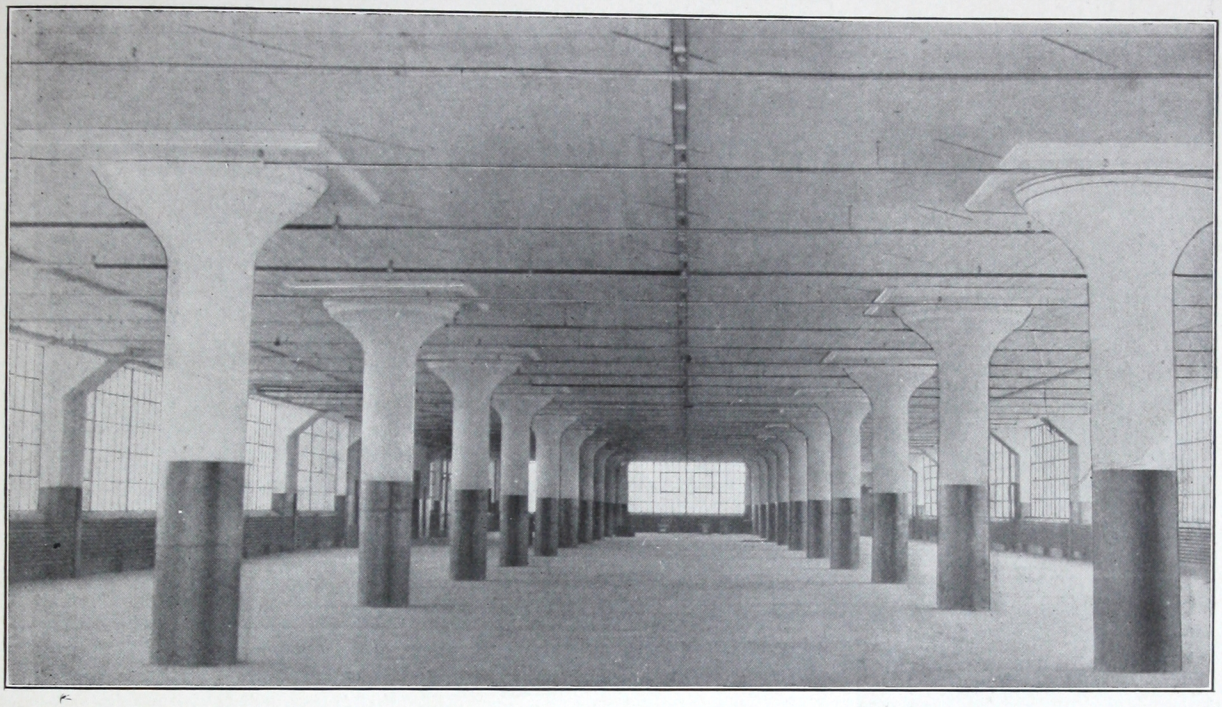


Wright Aeronautical Co. Building, Paterson, N. J.

F. W. Wentworth, Architect, Paterson, N. J. *Cramp & Co., Contractors, Phila., Pa.*

Lyons-American Silk Co. Mill, Paterson, N. J.

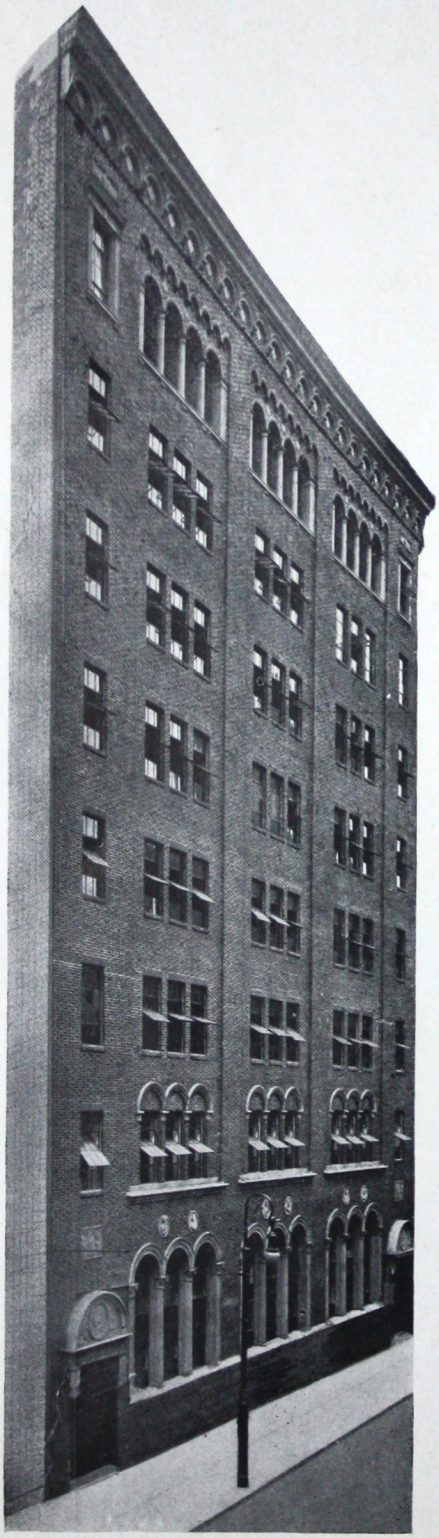
P. S. Van Kirk Co., Contractors, Paterson, N. J.



Interior view of Building Wright Aeronautical Co.

C. De Grado Silk Dyeing Co., Paterson, N. J. *John C. Van Vlanderen, Architect, Paterson, N. J.*

BOCA
SOLID STEEL SASH



Terminal Warehouse Co. Building
South William Street, N. Y. City
Richard Deeves & Son, Contractors, N. Y. City
James W. O'Connor, Architect, N. Y. City

Agencies for
BOCA STEEL SASH
in the following cities:

BOSTON, MASS.
HARTFORD, CONN.
NEW HAVEN, CONN.
SYRACUSE, N. Y.
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PITTSBURGH, PA.
BALTIMORE, MD.
WASHINGTON, D. C.
RICHMOND, VA.
NORFOLK, VA.
RALEIGH, N. C.
AKRON, OHIO.
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